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magnification. FIG. 9C is a diagram of a display 190 of a touch screen 100 showing an image magnified under greater pressure using the third method of magnification. In this embodiment, the display control 106 of the touch screen 100 uses a variable display frame 182, 192. The variable display frame 182, 192 displays a zoomed portion of the image determined by the position signal generated from the touch sensor. The image 180, 190 outside the variable display frame 182, 192 remains unchanged. As illustrated in FIG. 9A, the arrowhead F represents a point at which the control pen 120 presses the sensing plate 102. As illustrated in FIG. 9B, when a light pressure is exerted on the sensing plate 102 by the control pen 120, the image at the touch point 122 is zoomed in and is displayed inside a small variable display frame 182 that is expanded from the touch point 122. As illustrated in FIG. 9C, when a greater pressure is exerted on the sensing plate 102 by the control pen 120, the image at the touch point 122 is zoomed in and displayed inside a larger variable display frame 182 that is expanded from the touch point 122.

In contrast to the prior art, the present invention makes use of the pressure generated by pressing the control pen 120 or other touch device on the sensing plate 102 to control the zoom ratio and zoom area. This is a powerful and convenient way for users to control what they see, and cannot be achieved by the prior art.

The above disclosure is not intended as limiting. Those skilled in the art will readily observe that numerous modifications and alterations of the device may be made while retaining the teachings of the invention. Accordingly, the above disclosure should be construed as limited only by the metes and bounds of the appended claims.

What is claimed is:

1. A touch screen comprising:

a display panel for displaying an image;

a touch sensor having a sensing surface for sensing intensity and position of an external force imposed thereon and generating a corresponding pressure signal and a position signal; and

a display control electrically connected to display panel and the touch sensor for controlling the image and zooming in on a portion of the image according to the pressure signal and the position signal.

2. The touch screen of claim 1 wherein the touch sensor comprises:

a transparent sensing plate having a plurality of sensing units each positioned at a predetermined position on the display panel for detecting intensity of an external force; and

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a pressure detector electrically connected to the sensing plate for detecting the intensity and position of the external force imposed on the sensing plate and generating corresponding pressure and position signals.

3. The touch screen of claim 2 wherein the transparent sensing plate is fixed on the display panel.

4. The touch screen of claim 2 wherein each sensing unit has a capacitor, and when an external force is imposed on one of the sensing units, capacitance of the sensing unit will change, and the pressure detector will generate the pressure signal according to the capacitance of the sensing unit and will generate the position signal according to the position of the sensing unit.

5. The touch screen of claim 1 wherein the display control will zoom the portion of the image corresponding to the position of the external force detected by the touch sensor and display that portion of the image full-screen on the display panel.

6. The touch screen of claim 1 wherein the display control will zoom in on the portion of the image corresponding to the position of the external force detected by the touch sensor in a fixed display frame on the display panel; the fixed display frame has the same size for different intensities of external forces; and the image outside of the fixed display frame will remain unchanged.

7. The touch screen of claim 6 wherein the fixed display frame is displayed at a position corresponding to the position of the external force detected by the touch sensor on the display panel.

8. The touch screen of claim 1 wherein the display control will zoom in on the portion of the image corresponding to the position of the external force detected by the touch sensor in a variable display frame on the display panel; the variable display frame has a size which varies with the intensity of the external force; and the image outside of the variable display frame will remain unchanged.

9. The touch screen of claim 1 wherein the display control uses a linear conversion model to zoom in on the image.

10. The touch screen of claim 1 wherein the display control uses a step conversion model to zoom in on the image; the step conversion model has a plurality of pressure sections each having a corresponding zoom ratio; and when receiving a pressure signal which falls within one of the pressure sections, the pressure signal will be converted to a corresponding zoom ratio.

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